

Faculty Information Assignments: A Longitudinal Examination of Variations in Survey Results

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ABSTRACT

A one-time survey may give a falsely precise indication of local usage. Examining four iterations of a library assignment survey reveals large within-discipline variation; even individual faculty members are inconsistent in their use of library assignments from year to year. Additional causes of variation include changing faculty and pedagogy. This article examines data from a survey sent to faculty about library assignments in their courses in 1996-1997, 2001-2002, and 2003-2004 at a small private masters-level college, and in 2004-2005 at a large public doctoral-intensive university. The researcher expected to discover how coursework in different disciplines required different levels of independent information seeking ("library usage"). The survey method was chosen when the contents and formats of course syllabi proved too inconsistent to yield the needed information about usage of library assignments. Use of library assignments was expected to be relatively consistent from year to year, and from institution to institution, because of the assumption that discipline strongly affects use of library information sources. Each time, the survey achieved a good response rate and gave apparently valuable information about current library assignments. However, the expected disciplinary consistency was much less than anticipated. The variation from year to year within disciplines -- an average of sixteen percentage points -- was almost as great as the variation between disciplines in any one year--an average of 18 to 29 percent. This article describes the intent, scope, focus, and initial findings of the original surveys, then uses the data from the four together to explore potential causes of the year to year variation. The results of this secondary analysis suggest that faculty use of information-seeking assignments is much more volatile than any onetime survey might show.

BACKGROUND: LITERATURE REVIEW

There are a wide variety of methods of measuring use of library materials: circulation, in-house use (reshelving and other methods), database counts, and citation analysis of both published research and student-generated (unpublished) papers¹. Each method has its strengths and weaknesses--data that it includes and data it omits. While many of the methods can yield discipline-specific data, it is often not user-specific and discipline-specific at the same time. For example, a library automation system can generate circulation data for items in particular call number ranges, but not who has circulated them. Patron data, sorted by user status and major, can generate circulations per person per major, but not the subjects of the items used. Database usage data are even less specific, providing information on usage of particular databases (and, if Project Counter-compliant, individual titles), but only at the library level, unconnected to particular users.

Syllabi have been examined in order to determine library assignments². However, syllabi present two obstacles to a comprehensive overview of a college's course assignments. First, there may or may not be a centralized source for syllabi, either paper or online posting. Second, faculty members differ in syllabus format. Not only do individuals differ, but also disciplines differ. Some areas such as education may have accreditation-mandated formats while others such as history are more individually determined. Using syllabi, then, poses both a logistical problem in terms of obtaining syllabi, and a systemic bias if some discipline's syllabus format was more informative than others.

Instead, in 1997, at a small masters-level college ("masters-college"), the choice was made to conduct a survey of faculty asking specifically about the information usage they required of students. Appendix A gives the text of the survey. The design of the survey was based upon three assumptions that were observed locally on an anecdotal basis and generally supported in the library science literature:

- library use patterns are influenced by subject/discipline;
- student library use is influenced by course assignments; and
- there is a distinction between assigned information use and independent information-seeking.

Academic information-seeking behavior is generally assumed to be strongly influenced by the discipline of the faculty member or student. Library school courses, textbooks, and literature reviews commonly focus specifically on humanities, science, social science, and other disciplinary groupings, within them noting by-field differences. See, for example, East's review of research on the information-seeking habits of humanities scholars, in which he makes the point that even "humanities" can be too broad a category, as more specific disciplinary needs strongly affect library use habits³.

Several recent studies support this assumption. Liu and Yang found significantly different use of Texas A&M University libraries by discipline, and Maughan found that faculty differed by discipline in requiring library assignments (e.g. a majority in political science, only 18 percent in business)⁴. Locally at masters-college, library departmental liaisons observed that faculty in different departments behaved differently with respect to library use and library assignments: e.g. history teachers regularly assigned papers, and mathematics teachers used the collection themselves but made no library assignments for students in their courses.

That student use of a library and its resources is strongly influenced by course assignments is similarly assumed in the literature, shown by research, and confirmed by observation during reference interviews. As far back as 1935, in a study distinguished for its level of detail, McDiarmid found that 95 percent of student library use was determined by course assignments, and it seems not to have changed much in more recent research⁵. In 2001, Whitmire found that explicit course-related writing and "active learning" activities (captured in the College Student Experience Questionnaire) were the strongest predictors of library use⁶. Baruchson-Arbib and Shor found that for some disciplines (natural sciences, but not social sciences) professorial encouragement significantly affected student use of electronic information sources⁷. Locally,

librarians had often used the question, "What course is this for?" as an element of successful reference interviews.

Finally, there appeared to be a useful distinction between assigned and independent information. Students in many classes used information sources that were identified for them by professors: textbooks, reserve readings, specific Web sites, and paper handouts. While college and library-hosted Web pages could gather these materials, and print reserves were housed in the library, this usage seemed inherently different from a student seeking unassigned information for either short or more complex projects. In the survey, an information source was defined broadly, so as to avoid distinctions between online or print formats or varieties of access points: "Materials must be 'published'--books, articles, substantial Web pages, videos; it does not include interviews or chat rooms."

The independent vs. assigned distinction (along with a broad meaning of information resource) was also employed in the Digital Library Federation Scholarly Environment study, which worded its questions in terms of what an instructor "makes available" and what students "have to independently find."⁸ Indeed, the ACRL Standards for Information Literacy are geared towards "self-direction" on the part of students, who "assume greater control over their own learning."⁹

ORIGINAL SURVEY METHODOLOGY

The "form" part of the survey is reproduced in Appendix A. Each instructor received an individual e-mail in January. After a brief introduction, the e-mail was personalized by listing each course he or she taught during that academic year with questions for that course about types of assigned information sources used, and the level of information search requirement involved. The survey design was influenced by locally observed patterns and categories; interviews with pre-testers informed the final version, and that version also allowed and encouraged nonstandard replies if respondents desired. The first section for each course asked about "assigned" information sources such as textbooks, handouts, reserve readings, and Web-based resources. This was designed to track the need for library-based reserves.

The question about independent information assignments distinguished between "heavy" (or "major") meaning that students must find more than two items vs. "minor" (or "light") for one or two. Throughout the summary and analysis below, unless otherwise specified, the term "library use" refers to the presence of "any" (heavy/major or light/minor) independent information search assignment.

The distinction and the wording came from local observations. For example, librarians had observed courses in several fields (such as history, psychology, and nursing) where students were instructed to find one item (book or article), while other courses (higher-level in the disciplines, or the basic research course in the English department) where research using several sources was required. No respondents questioned this division.

The survey provided course-specific information. The survey was answered by faculty but courses were its unit of analysis--not how many faculty used library assignments, but how many courses did. Combined with existing enrollment data, this provided student-quantity information.

This is different from the data generated by some other studies. The 'Digital Library Federation study asked both students and faculty about "how many additional course readings" they had to "independently find"; the data were reported by respondent type-person, not course¹⁰. The National Survey of Student Engagement (NSSE), a survey designed to capture information about college student learning behaviors, asks students if they have had research paper assignments in (any of) their courses¹¹. This survey instead was designed to provide more specific, volume-by-discipline information: exactly how many courses, with how many students, involved library work-heavy, light, or none. This could then be combined and compared with circulation and patron data to provide a broader perspective on library usage.

Initial Use of Results

The results of the survey were used primarily to design library outreach for bibliographic instruction, and to provide additional information for budget allocations. Many allocation formulas for collection development dollars incorporate some measurement of anticipated volume of use, often expressed either as headcount or as student credit hours. A 1995 survey with 192 academic library respondents found that student credit hours were the third-most often used formula element (53 percent vs. 54 percent for faculty FTE and 63 percent for materials prices)¹². In 1991, Budd reviewed published guidelines and surveyed libraries, finding that student numbers were among the most commonly used allocation factors¹³.

A student-credit-hour (SCH) measure is more detailed than a headcount of majors or of faculty: each student credit hour represents one student for one academic credit (twenty students in a three-credit-course is 60 SCH). An important advantage of SCH is that it accounts for disciplines (often called "service" departments) in which there may be many students, but few majors. For example, a college with a professional or technical orientation may provide many history courses for general education needs, without producing many history majors. Further, class sizes in service courses may be larger than in courses for majors. SCH preserves more class size and student volume information than head counts of faculty or majors would.

In the local allocation guidelines (not a rigid formula), the survey information on the relative presence of library assignments in each course was combined with student credit hours. For some departments, there was a distinct difference between raw student credit hours (SCH), and those involving library assignments (L-SCH). For example, in 2002, nursing and history courses accounted for a greater percentage of library-related student credit hours relative to overall SCH (21 percent of L-SCH vs. 8 percent of SCH for nursing and 5 percent of L-SCH vs. 2.5 percent of SCH for history), while biology and chemistry, a smaller percentage (8 percent vs. 3 percent, 5 percent vs. 1 percent, respectively; see Appendix B for other departmental data).

The survey was repeated at masters-college in 2002 and again in 2004, each time covering coursework for an academic year. It is commonly assumed that library use changes and develops over time. In addition, institutions and faculty members may also change: adding programs, changing teaching methods, reaching different student populations with different instructional staff.

It was also repeated with three departments at a different institution: a large, public, urban university. The departments corresponded to those at masters-college and a goal was to see how instructional strategies might differ. Faculty and librarian staffing patterns are distinctly different between different types of institutions.

In each of these surveys, each time, taken individually, the results provided ordinary, internally focused data that informed local practice. Each department's "score" was the proportion (percentage) of its surveyed courses reported as using any library resources. Using a proportion score instead of a raw count allowed for differences in the numbers of courses, which varies slightly even under normal circumstances. At the masters-college, in 1997, coursework was divided into three quarters but was on the semester system in 2002 and 2004; at the much larger university, coursework was on the semester system. The basic disciplinary premise, that some departments would include library work in more of their courses than others, can be standardized across these differing numbers of courses by using the proportion score.

Fig. 1 shows all the masters-college departments for three years; Fig. 2 shows the three departments common to all four of the surveys. "Library use" throughout the discussion is used to refer to assignments requiring independent information seeking.

It is in seeing these proportion scores for all of the years and institutions together that the variations between years, compared to those between disciplines, appear so clearly.

This was the variation that raised questions about the use of faculty surveys for measuring or predicting library use. The survey design assumed that each discipline would show a different rate of library use, but that discipline would be the most important factor in predicting library use, and that it would be relatively constant year to year and institution to institution.

The year to year variation led to a second stage of analysis. If discipline did not explain most of the variation in results, what could? The following discussion explores factors which might be involved, using longitudinal comparisons which provide much more raw data for examination than a single survey could. Significant limitations remain. The original surveys were descriptive, not designed to prove or disprove specific hypotheses; they did not include some information that in retrospect may seem useful. Further, selecting a unit of analysis for this secondary examination presents some challenges: is the focus individual respondents, courses, departments (disciplines), or students? For each question, a relevant unit of analysis had to be selected; in most cases, a percentage score rather than raw numbers is used, in order to permit comparisons between institutions and departments of different sizes.

Ten potential sources of variation were examined. Six factors pertain to the instrument--exploring whether it is a reasonable measure of "library use" (independent information assignments), and whether administration issues affected the results. Since only one factor (faculty type) appears statistically significant or non-trivial, four additional factors were explored to examine what real, vs. instrumental, differences in faculty and pedagogy might create variations in library assignments--again, variation that is greater than that produced by discipline alone.

Table 1 summarizes these issues. There are potentially other factors involved, but the data set only can provide information about a limited number.

Reliability: Alpha and Test-retest

Instrument reliability refers to the consistency with which an instrument can measure what it is supposed to measure: that is, the most reliable instrument is one where there is the least difference between "true" scores and those generated by the instrument¹⁴.

In formal survey construction, there are accepted quantitative approaches to assessing instrument reliability. The most common are test-retest and internal reliability (Cronbach's alpha). The alpha internal reliability score is available when a survey includes essentially redundant or repetitive questions, so that a respondent's consistency in marking these parallel items all one way, or all another way, can be measured. While this is useful in theory, in actual survey administration, it can be a detriment because it lengthens the survey; usually, the longer the instrument, the lower the response rate. For this reason, the original survey was not designed to provide alpha-reliability scoring; the ease of responding was considered more important.

For test-retest reliability, respondents in whom nothing "real" has changed are expected to answer survey questions in the same way when given the survey a second time. This has an obvious limitation in that different answers can reflect real differences rather than unreliability. Surveys given a year apart can expect to encounter real differences in the underlying reality.

Reliability: Non-library Items

One form of information about the reliability of this survey can be found by comparing the survey responses about assigned vs. independent information assignments. Responses about the use of textbooks at masters-college changed little from year to year (an average change per department of 9-11 percent), less than for independent (library) assignments (16-17 percent). The same was seen in most other assigned sources (not shown)--for example, almost all professors, in all departments, consistently used handouts in most classes each year of the survey.

This information can be interpreted two ways: either respondents had much more difficulty answering the library question reliably than the assigned information question, or there really was more change year to year in library assignments than in assigned information source usage.

Other instrument information can come from how those surveyed responded: in a sense, treating all respondents as pre-testers:

Faculty Difficulty With Survey Technology; Faculty Difficulty With Survey Questions

In each iteration, more faculty had problems with the technology than expressed questions about the content. Every time, some faculty members e-mailed that they had technical problems or simply printed out the e-mail and marked it in ink and mailed it (this declined from

approximately 20 percent of respondents in 1997 to 1-3 percent of respondents in 2005). In contrast, there were, consistently, very few cases where faculty chose "optional" or "other" to describe library use, wrote in other comments, or sent inquiries to the survey author: approximately three to five individuals per iteration. More respondents having problems with e-mail than with survey questions is an indication that the question wording was not a large problem. In either case, though, the numbers are simply too small to attribute survey variation to problems with the survey wording or administration.

There are two other issues of survey administration that might have affected the results: survey fatigue and respondent type.

Survey Fatigue

Looking at the numbers of respondents, it appears that survey fatigue may have had a small effect. During the last two iterations at masters-college, there was a decline in survey response from 65 percent to 59 percent.

Examining data on individual respondents from 2002 compared to 2004, however, the differences are not statistically significant. Ninety-one faculty members were present for both the 2001-2002 survey and the 2003-2004 survey; seventy answered both surveys and twenty-one answered only one time. Of those twenty-one, those who answered the first time but not the second only slightly outnumbered those who answered the second time but not the first: thirteen to eight. This difference is not statistically significant. Using the chi-square test for frequency distributions on the three masters-college years, $P=0.51$, indicating that the differences are likely not greater than what chance alone would produce.

Faculty Type

The final administrative issue is whether different types of faculty surveyed might have different response rates. In each of the survey administrations, at both institutions, the response rate from adjuncts (part-time faculty) was distinctly, and statistically significantly, lower (chi-square test, $P<0.001$).

Because a large percentage of instructional staff at colleges and universities are part-time (44 percent overall; 34 percent in four-year institutions)¹⁵, this is a reminder that data from a large segment of the university patron base may be difficult to obtain.

INSTRUMENT ISSUES: SUMMARY

Of the five issues for which there is at least some quantitative data, only respondent type appears to have affected survey responses. There were very few non-conforming responses, and the return rates were 43 to 65 percent (as high or higher than many library surveys)¹⁶. This seems to indicate that users found the survey understandable and answerable. This is not to say that other survey questions might not have been better, in these institutions or in others, but that like

hundreds of other local surveys, it appears to have been reasonably meaningful to the participants and the librarians involved. Even in the absence of formal reliability measurement, it may be a mistake to assume that the variations are merely artifacts of the instrument and not differences rooted in reality.

Real Changes in Library Usage

Four issues were explored to try to quantify real issues that might change library usage survey data from year to year: whether faculty responded in proportion to how likely they were to use library assignments; whether different types of faculty used library assignments differently; how often the same course involved different faculty, using different assignment types; and whether faculty varied their own teaching methods year to year.

Response Rate and Library Use

Was it the case that the less often a faculty member used library assignments, the less likely he or she would be to respond to a library use survey? In other words, is there a correlation between response rates and library use? One of the challenges in quantifying this is determining which response rate to use. Table 2 shows that of the sum of faculty members contacted, a certain percentage responded. However, library usage is course-specific, rather than person-specific: a single respondent may have one, three, or zero courses which use library resources.

To answer this question, the department was used as the unit of analysis, with the department's proportion score compared to its response rate. Does a response rate significantly correlate to the percentage of courses using library resources? For example, if a department had a low response rate, did it also have a low reported rate of library usage? That might be a reasonable prediction: that faculty in a discipline which is less likely to use library assignments might be less responsive to a library survey request

This prediction is incorrect, however. In fact, a negative correlation ($r=-0.17$) was measured between the percentage of courses reported with "major" library use and the percentage of faculty respondents per department. There was a negative ($r=-0.14$) correlation between the percentage of courses with "any" library use and faculty response. Neither of these is statistically significant, and even the direction does not support the prediction. A negative correlation describes a situation where the greater the percentage of faculty who responded, the smaller the percentage of courses reporting library assignments.

The data obviously do not include library use in the courses taught by non-respondents. In a mathematical experiment, all non-reported courses were assumed to have non-library use. This also resulted in not statistically significant correlations between library use and response rate, based upon the department as the unit of analysis. There appears to be no consistent relationship between proportion of respondents to the survey and proportion of courses using library assignments.

This is in many ways a reassuring finding--that non-respondents might not be very different from respondents. Since non-respondents are, by definition, unknown, this indirect information is the only information available.

Library Use and Faculty Type

Do adjunct faculty incorporate library assignments to a greater or lesser degree than do full-time faculty? Unfortunately, this analysis is weakened by the different response rates. There are data for less than a third of adjunct courses vs. three-quarters of courses taught by full-time faculty (Table 3). What data there are, however, does not support this hypothesis. In each year, for reported courses, adjuncts split their library assignments -- "any" vs. none -- in roughly the same proportions as full-time faculty for that year. For all masters-college courses combined (years 1997, 2002, and 2004), shown in Table 4, there appears to be a different split, but this is not statistically significant (chi-squared, $P=0.23$). At the university, the split is also nearly identical and statistically insignificant ($P=0.29$).

Change in Pedagogy

Across the four surveys, only one direct comparison of year-to-year within-faculty per-course variation was possible. The 1997 data could not be compared to 2002 because of a change from quarters to semesters, and the masters-college (1997, 2002, and 2004) data could not be matched to faculty at the large university (2005). For the one comparison possible, masters-2002 vs. masters-2004, there were 109 cases where the same professor answered the 2002 and 2004 surveys about the same course. In 30 percent of these courses, the professors reported different levels of library use. In two-thirds of the changes (19 percent overall), library use was increased: from minor to major or from none to minor or major. In 11 percent of courses, library use decreased: from major to minor or to none at all. A year to year comparison is not available for the university data; there were very few changes from one offering to another during the same year (10 percent: three of the thirty courses taught in multiple sections by the same instructor in fall and spring).

Change in Faculty

Two sets of comparisons were available to determine what difference a change in the faculty teaching the same course made; as noted above, the 1997 survey data cannot be matched on a course-to-course basis to the 2002 and 2004 results. In the masters-college 2002 and 2004 surveys, there were forty-seven courses which had different professors in either the same or different years. Of these, the majority, 57 percent, varied in their library use. At the large university, within the 2005 academic year, there were forty-three courses taught by more than one instructor. Of these, 67 percent varied in their library use, with at least one of the group of faculty choosing a different level of library usage than others. Whether institutions are small or large, faculty teaching assignments do not remain static and so faculty preferences can change

library use requirements. The survey data showed that different faculty members used different pedagogies in teaching the same courses.

REAL ISSUES: SUMMARY

Of the four "real use" issues examined, two appear to be insignificant. First, whether a faculty member often uses library assignments does not correlate with whether they responded to the survey. Second, adjunct faculty do not appear less likely to make library assignments. Two other issues, however, although not statistically testable, appear to be quite large--changes in pedagogy and changes in faculty. Thirty percent of instructors changed their own use of library assignments from one year's survey to the survey two years later, and well over half (57 percent and 69 percent) of the courses offered by different instructors involved different levels of library assignment.

DISCUSSION

Each of the surveys appeared to provide interesting and useful data. Moreover, there were, each time, noticeable differences from discipline to discipline, as previous research had suggested. However, changes from year to year were large too--half to three-quarters the size of the disciplinary change. Only a longitudinal analysis at a very specific level could explore potential reasons for this difference. It appears that the most important factor is the changing decisions of individual faculty members.

What are the important lessons of these data?

- Discipline is important, but not entirely determinative of the use of library assignments.
- Faculty staffing patterns -- turnover and use of adjuncts vs. full-time faculty -- can have noticeable effects on library assignment patterns.
- Individual faculty preferences can change from year to year, both towards and away from incorporating library assignments.

Librarians may or may not be able to anticipate these differences, which may depend more on class size, on non-class demands on faculty time, or on developments within the discipline than differences in library resources or user instruction.

Another conclusion is that librarians should be cautious about the data from any one year's survey. Sometimes, one year's survey -- especially when it reaches a large percentage of its targets -- is taken to be a sort of sample of future years. These results suggest that those years can be more different than previously assumed. The collection development process has always considered that it needs to build not just today's library, but a collection that serves the needs of tomorrow's users. Other services, too, should not try to be too specific in their responses to just one year's survey results.

The bottom line is that it remains important to understand disciplinary approaches to information and to the use of libraries in teaching. However, these survey results show that, if we still assume

that undergraduate library use is at least somewhat affected by faculty assignments, that resulting volume of usage will be affected by more than just disciplinary enrollments. This survey analysis showed that individual faculty preferences can change from year to year, different faculty have different preferences, and adjunct faculty are difficult to reach with surveys. The analysis found no statistically significant data to support theories of survey fatigue, that library-intensive faculty are more likely to respond to surveys, or that adjunct faculty differ from full time in library usage. Because the return rate for adjunct faculty is so low, however, the last finding is very tenuous.

This calls for continuous outreach to faculty. As librarians seek to be a part of the program development process on their campuses, through seats on curriculum and governance committees, so they must also be a part of faculty development for both full-and part-time faculty, so as to understand better the pedagogical choices they make for their students. And this process needs to continue every year, with every new "class" of faculty.

Acknowledgment: The assistance of Anne Marie Moser in compiling the database is gratefully acknowledged.

Tables and Figures:

Figure 1
Proportion of Courses with Any Library Use

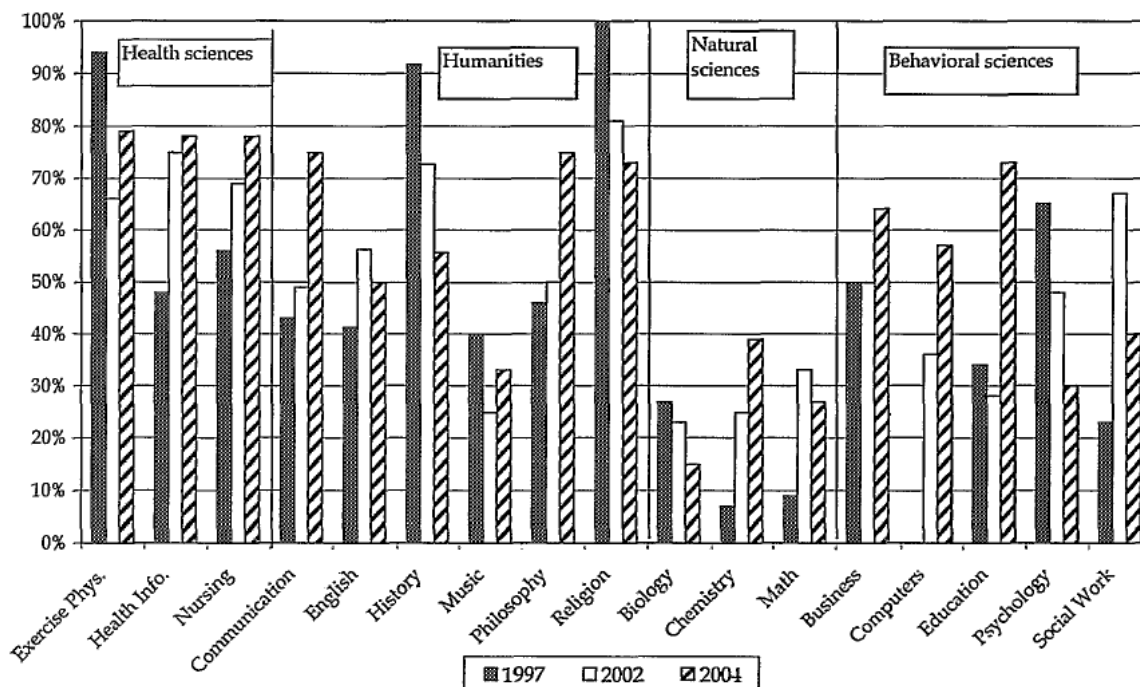
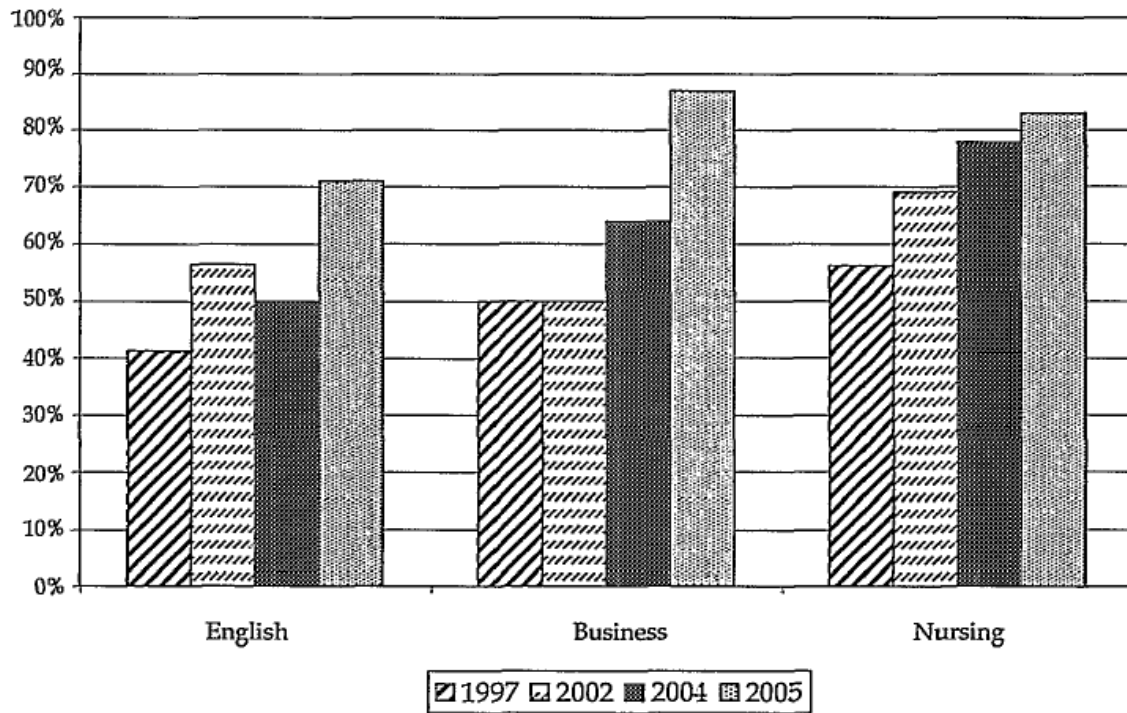


Figure 2
Proportion of Courses with Any Library Usage



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Table 1 Survey Variation Issues

Basic differences

Differences discipline to discipline ^a	
1997 18 disciplines-----	29%
2002 18 disciplines-----	19%
2004 18 disciplines-----	21%
2005 3 disciplines-----	8%
Differences year to year ^b	
1997 vs. 2002-----	16 point change
2002 vs. 2004-----	14 point change
2004 vs. 2005-----	16 point change

Instrument issues

Reliability:-----	Data not available
alpha and test-retest	
Reliability:-----	9-11 point change
non-library items	
Faculty difficulty with-----	Minor: approximately 3%
survey technology	
Faculty difficulty with-----	Minor: approximately 1%
survey items	
Survey fatigue-----	Not significant by chi-square
Faculty type and-----	Major: significant by chi-square
response rate	

Library usage issues

Response rate and library use-----	Non-significant correlation
Faculty type and library use-----	Non-significant correlation
Change in pedagogy-----	30%
Change in faculty-----	57% -67%

^aStandard deviations, measuring how different the proportion scores for departments are from the other departments (essentially the average of the differences between each department and the group's average). The range of scores was 0 to 100 percent.

^bAverage percentage-point change in "any library use" proportion score, e.g. a change from 50 percent to 75 percent would be a fifteen point change.

Table 2 Response Rates and Respondents by Year

	Masters-College			Large University
	1997	2002	2004	2005
Response rate	65%	65%	59%	42%
Respondents	103	81	85	137
Non-respondents	56	44	59	186

Table 3 Adjuncts as Respondents: Adjuncts vs. Full-Time Faculty Response Rate

	Adjuncts	Full-Time
Masters-1997	31%	81%
Masters-2002	21%	79%
Masters-2004	28%	74%
Univ-2005	27%	65%

Table 4 Library Use Adjuncts vs. Full-Time Faculty

Courses Taught by	Using This Level of Library Assignment	
	Any	None
Masters-college, combined 1997, 2002, and 2004:		
Adjuncts	46%	54%
Full-time	52%	48%
University, 2005		
Adjuncts	59%	41%
Full-time	55%	45%

APPENDIX A

Library Use Survey

For XXX 9999 [specific course]

ASSIGNED materials:

Please put an X in front of ALL the types of materials your students are assigned:

- Textbooks (most students buy).
- Handouts (distributed in class).
- Reserves ([specific library name for reserves system]).
- Items placed online on [institution] hosted Web pages.
- Specific designated links (actual content is hosted off-campus).

INFORMATION SEARCH requirements:

This refers to assignments where students need to access/research materials that are NOT specifically given to them. There is an element of "search" (finding and evaluating materials) as well as "use." Materials must be "published"--books, articles, substantial Web pages, videos; it does not include interviews or chat rooms.

Here, put just ONE "X" that BEST describes student requirements:

- Heavy search and use. At least three different sources must be found. For example, write a term paper using at least 10 sources.

- Light search and use. One or two sources must be found. For example, read one book and write a book review.
- Use is optional for example, students can do a paper OR interview a grandparent.
- No search and use.
- Other (describe).

Notes: For the 1997 survey, library use was defined as above but described as "major" and "minor" rather than "heavy" and "light"; for reserves and online hosting, specific local service names were used. For 2003-2004, an additional question asked about the format of the course—partially, fully, or not online.

APPENDIX B

Student Credit Hours Compared to Library-use Weighted Student Credit Hours As a percent of all 2002 student credit hours or library-weighted student credit hours.

	Percentage of SCH	Percentage of L-SCH
Exercise phys.	4.0%	6.2%
Health info.	1.9%	2.1%
Nursing	8.3%	21.0%
Communication	3.5%	3.0%
English	6.1%	4.7%
History	2.5%	5.0%
Music	2.3%	0.7%
Philosophy	2.5%	1.4%
Religion	3.6%	4.9%
Biology	8.2%	2.7%
Chemistry	4.8%	1.1%
Math	3.1%	2.5%
Computers	3.1%	1.0%
Education	10.8%	7.5%
Business	7.4%	7.6%
Psychology	7.2%	6.6%

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- ¹⁵ U.S. Department of Education, National Center for Education Statistics, "Table 1: Percentage Distribution of all faculty and instructional staff, by employment status, institution type, and program area, 2004," National Study of Postsecondary Faculty (NSOPF:04) (Washington, DC: Author, 2003), 7.
- ¹⁶ For a comparison, Manuel, Molloy, and Beck reported that eight core faculty library instruction surveys had response rates of 17, 17.5, 28, 33, 34.5, 37, 37, and 41 percent; Kate Manuel, Molly Molloy, and Susan Beck, "What Faculty Want: A Study of Attitudes Influencing Faculty Collaboration in Library Instruction," in *Learning to Make a Difference: Proceedings of the Eleventh National Conference of the ACRL (Association of College and Research Libraries, 2003)*, 292-303.